

REMARKS

The application has been reviewed in light of the Office Action mailed on January 13, 2006. Claims 13, 82 and 83 have been cancelled. Claims 1 and 78-81 have been amended without adding new matter. Reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

Applicants acknowledge with appreciation the allowance of independent claims 23, 28, 39, 44, 77, 84 and 85.

Claims 1-3, 5, 6, 9-11 and 78-83 stand rejected under 35 U.S.C. 102(e) as being anticipated by Anand et al., U.S. Patent No. 6,307,265 ("Anand"). Reconsideration is respectfully requested.

Claim 1 has been amended to incorporate the limitations of claim 13. According to the Office Action, claim 13 would be allowable if rewritten in independent form. Thus, claim 1 is now in condition for allowance. Claims 2, 3, 5, 6 and 9-11 depend from claim 1 and are allowable together with their base claim.

Claim 78 recites a "plurality of braces transversely extending between lateral sides of a microstructure formed over a semiconductor substrate." Claim 78 has been amended to recites that the "microstructure compris[es] a generally solid cylindrical shape." Anand fails to teach or suggest this limitation.

The Office Action addressed a similar limitation in its rejection of dependent claim 8 as being obvious over Anand. The Office Action admits that Anand does not teach or suggest "that the microstructures comprise generally solid cylindrical shapes," but asserts that it would have been obvious to form generally solid cylindrical

microstructures in Anand “since such a modification would have involved a mere change in size of a component.” Office Action, page 6.

Applicants respectfully disagree. The Office Action compares Anand’s “trough-shaped barrier layer 27b and a conductor 28b fitted in the barrier layer 27b” (column 18, lines 39-40) to the claimed “microstructure.” In Anand, the trough-shaped barrier layer 27b and conductor 28b form interconnect wires W1 that are patterned to extend horizontally along the Anand device. See, e.g., Figure 7 and column 18, lines 35-55. The wires W1 cannot be formed into the claimed “microstructures comprising generally solid cylindrical shapes.” Such a modification would not be a “mere change in the size of a component,” as asserted by the Office Action. Rather, such a modification would prevent formation of “trough-shaped” patterned wires as required by Anand. Such a modification is improper.

Thus, amended claim 78 is allowable over Anand. Claim 80 has been amended to recite “at least two microstructures formed over the substrate, said at least two microstructures comprising generally solid cylindrical shapes.” Amended claim 80 is allowable over Anand for similar reasons.

Claim 79 has been amended to recite a “brace transversely extending between lateral sides of at least two microstructures on a semiconductor substrate, said at least two microstructures comprising stud capacitors, wherein said at least two microstructures are supported only by said at least one brace, wherein said at least one brace comprises one material layer.” Anand fails to teach or suggest this limitation, as acknowledged in the Office Action by the indication of allowability of claim 13. Thus, claim 79 is now in condition for allowance.

Claim 81 has been amended to incorporate the limitations of dependent claims 82 and 83 and to further distinguish over Anand. Claim 81 recites “microstructures formed over the substrate; and a plurality of braces transversely extending between lateral sides of at least two of the microstructures.” Amended claim 81 now recites that the “braces comprise a lattice support structure wherein said plurality of braces intersect at said microstructures, and wherein there is a vertical space between said support structure and said semiconductor substrate.” For example, the specification discloses that “it is also possible to provide more than one dielectric brace layer where they intersect at a container (or containers) such that a two-dimensional network or lattice of dielectric brace layers is formed through-out the array of containers.” See, e.g., specification, page 8, lines 25-28, and Figure 4D.

Anand fails to teach or suggest the limitations of amended claim 81. Anand’s insulating layers 29, which the Office Action compares with the claimed “braces,” are layers formed between side surfaces of adjacent trough-shaped barrier layers 27a, 27b, which the Office Action compares to the claimed “microstructures.” Column 18, lines 35-52; Figure 7. Anand’s insulating layers 29 do not comprise a “lattice support structure wherein said plurality of braces intersect at” barrier layers 27a, 27b. For at least this reason, amended claim 81 is allowable. Claims 82 and 83 have been cancelled.

Withdrawn claims 4, 7, 12, 14 and 15 are dependent claims which depend from allowable claim 1. Claims 4, 7, 12, 14 and 15 incorporate every limitation of claim 1 and should be allowed together with their base claim.

In view of the above amendments and remarks, Applicants believe the pending application is in condition for allowance.

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